TOWN OF DISCOVERY BAY
A COMMUNITY SERVICES DISTRICT

President – Mark Simon • Vice-President – Chris Steele • Director – Bill Pease • Director – Kevin Graves • Director – Marianne Wiesen

April 25, 2014

Mr. James Marshall
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Ranch Cordova, CA 95670

Subject: Town of Discovery Bay CSD Tentative Order Comments

Dear Mr. Marshall:

The purpose of this letter is to provide comments on the Tentative Order for the Town of Discovery Bay Community Services District (District) Discovery Bay Wastewater Treatment Plant. We appreciate Regional Water Board Staff working so closely with the District in drafting this Tentative Order. We have reviewed the Tentative Order and the Nitrate plus Nitrite Option (provided as Enclosure 1) to the Tentative Order. In general, the District is in support of the Order, as written, with the Nitrate plus Nitrite Option, with the exceptions and comments noted in this letter for Regional Water Board consideration.

Upgrades and Improvements

As you are aware, the District has made significant upgrades and improvements to the wastewater facilities to improve reliability and reduce salinity. These efforts are summarized briefly below:

1. Wastewater Master Plan (2010) to address ways to improve reliability, permit compliance, and accommodate anticipated in-fill development.
2. Collection system and source water salinity monitoring (2012) that identified Well 5B as experiencing salinity breakthrough and quantified salinity increase from residential water softeners.
3. Issued $14.1 M in bonds for improving reliability and reducing salinity (2012). To support this debt service, the District raised rates by 28% in 2012 and 18% in 2013. Projects currently under design and construction include:
    a. $1.4 M Well 7 construction to replace Well 5B as primary water supply well, thus reducing salinity in wastewater.
    b. $12.7 M in reliability improvements to the WWTP, including redundant oxidation ditch and clarifier, redundant influent pump station, improved pumping systems, additional solids handling capacity, and additional UV system improvements.

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4. Water softener ordinance passed (2014), banning installation of salt and brine based water softeners.
5. Pharmaceutical removal pilot wetlands program, with UC Berkeley (since 2008).

Outside of the current bond funding cycle, the Wastewater Master Plan identified filtration as a possible need in the future to improve the operation of the UV system and compliance with the existing 23 MPN/100mL coliform limitation.

The District asks that the Regional Water Board consider the recent significant steps taken to improve WWTP effluent quality when you review the Tentative Order comments contained in this letter. The District's comments on the Tentative Order are as follows.

Nitrate plus Nitrite Option

The District is in support of the proposed Enclosure 1 Nitrate plus Nitrite Option, which is consistent with the policies used to regulate nitrate in the District's current Order. This Nitrate plus Nitrate Option provides a Facility performance based effluent limitation on nitrate plus nitrite (as N) of 31 mg/L, with which the District will be able to reliably comply. In 2005, the District conducted a dilution/mixing zone study, which demonstrated that the average dilution ratio in Old River is more than 1,000:1, and for the 10-year worst case concentration of effluent, Old River provides a dilution ratio of 13.2:1 for the acute condition and a dilution ratio of 23:1 for the chronic condition. Application of the 13.2: dilution ratio provides an average monthly effluent limitation of 75 mg/L. Thus, the District believes effluent limitation of 31 mg/L, contained in the Nitrate plus Nitrite Option, is adequately conservative.

The proposed nitrate plus nitrite effluent limitation of 10 mg/L, contained in the Tentative Order, is believed to be of marginal environmental benefit and will likely require the District to install de-nitrification basins and associated recycle pumps and piping to achieve reliable compliance. It is our understanding that the Delta is already saturated with nutrients; therefore any biostimulation occurring is light limited rather than nutrient limited. The 10 mg/L standard, itself, is well above nitrogen saturation values from a biostimulation perspective. Therefore, the potential issues are 1) protecting public health, and 2) reducing effluent constituents to the extent feasible under Resolution No. 68-16. The record is clear that Old River, near the District's outfall, has large amounts of nitrate assimilative capacity, considering the monthly averaging period the Regional Water Board applies to the 10 mg/L nitrate Primary MCL. Therefore, public health is not an issue. The driver for the restrictive effluent nitrate limitation appears to be Resolution No. 68-16. As discussed in the District's March 25, 2014 Anti-Degradation Analysis, the options are 1) simultaneous nitrification/de-nitrification, or 2) addition of de-nitrification basins. Given the proposed effluent limitation on ammonia of 0.7 mg/L (based on the 2013 EPA ammonia criteria), simultaneous nitrification/de-nitrification is very likely not a viable option for achieving compliance with both the newly proposed limitation on ammonia and a nitrate limitation based on no dilution credits. What appears to be consistent with maximum benefit to the people of California is to determine what reliable nitrate reduction is feasible via simultaneous nitrification/de-nitrification, and regulate the effluent discharge accordingly. The expense of de-nitrification basins, and associated recycle pumping and piping, do not appear to be justified when there would be no known benefit to public health or the environment considering the overall average greater than 1000:1 dilution of this effluent discharge. This

dilution is what separates Discovery Bay from Stockton, as an example. Based on the above discussion, as noted previously, the District suggests that the Nitrate plus Nitrite Option (Enclosure 1) is the appropriate option for inclusion in the District's Order.

Coliform

The District believes total coliform should be regulated to the public health protection limitation of 23 MPN/100 mL, as described by the Department of Public Health for effluent discharges receiving 20:1 or more dilution, and not the proposed 2.2 MPN/100mL Title 22 standard. The District understands that it is the Central Valley Water Board's policy to encourage the reuse of wastewater. However, given the District's proximity to high quality surface water, there is currently no market for the reuse of the District's effluent.

The District is planning to add effluent filters to improve the reliability of the UV disinfection system's ability to meet the current 23 MPN/100 mL total coliform effluent limitation. A secondary benefit of the proposed filters is that the District's effluent should be able to comply reliably with the proposed BOD/TSS 10/10 mg/L effluent limitations. Thus, these new effluent limitations are believed to be appropriate once the filters are operational, but not before.
The implied notion in the Tentative Order that any 10/10 BOD/TSS effluent can be disinfected reliably to the 2.2 MPN/100 mL total coliform standard is valid only when chlorine (not UV) is the disinfectant. For UV to reliably disinfect to the 2.2 MPN/100mL standard requires more than just filters. Many full Title 22 tertiary treatment processes have had problems complying with the 2.2 MPN/100mL total coliform standard when UV disinfection is used, and have had to undergo various upgrades to the UV system, coagulation/flocculation process, and/or filters in order to achieve compliance and thereby protect public health. However, in the District's situation, the 2.2 MPN/100mL total coliform standard is not needed to protect public health based on guidance from the Department of Public Health considering 1) the dilution this discharge receives, and 2) the enhanced treatment rule for potable water treatment plants using surface waters. Imposition of the unneeded 2.2 MPN/100mL total coliform standard will require either unneeded upgrades to the filtration and UV process, or a return to use of chlorine as the disinfectant. The District moved away from using chlorine disinfection in favor of UV to reduce effluent salinity and THMs.

Specific Comments

In addition to the big picture comments provided above, the District has the following specific comments:

1. **Table 4**: For consistency, all limitations should be rounded to 2-place accuracy. In other words, BOD load limitations (with footnote 1) should be 180, 260, and 350 lbs/day. BOD and TSS load limitations (with footnote 2) should be 200, 290, and 390 lbs/day. In addition, the footnote 2 design average dry weather flow should be 2.4 MGD.
2. **Page 6**: Methylmercury limitation should read "Effective 31 December 2030, the effluent calendar annual methylmercury load shall not exceed…". This is consistent with the compliance schedule outlined on page 22.
3. **Table 5**: For consistency, all limitations should be rounded to 2-place accuracy. In other words, TSS load limitations (with footnote 1) should be 530, 700, and 880 lbs/day;

Ammonia load limitation (with footnote 1) should be 150 lbs/day; and Ammonia load limit (with footnote 2) should be 160 lbs/day. The footnote 2 design average dry weather flow should be 2.4 MGD. Footnote 3 should read "...effective through 30 December 2017". Footnote 4 should read "...effective through 30 December 2023".

4. **Page 7 Total Coliform Organisms**: Should read "Effective immediately and through 30 December 2022...).
5. **Page 7 Mercury, total**: Should read "Effective immediately and through 30 December 2030...).
6. **Table E-6**: Monitoring frequency for pH, Ammonia, DO, Temperature, and Turbidity should be 1/Month, not 2/month. This increase from the District's current Order would double staff time required for receiving water monitoring, in increase laboratory costs.
7. **Table E-9**: 5/Week Total Coliform monitoring seems excessive given the available dilution and flow volume discharged. We request that this monitoring frequency be reduced to 2/Week for consistency with the District's current Order.
8. **Page 16 Turbidity Specifications Section a.i.(a):** The 10 NTU interim limit for INT-001 and INT-002 is not achievable on regular basis off of secondary clarifiers. Current values range from 4 NTU up to 15 NTU on a regular basis. The interim limit of 10 NTU will likely result in violations of the permit. UV disinfection has been tested by bioassay and shown to meet permit compliance with NTU up to 20. The District requests this interim limit be adjusted to 15 NTU as a 7 day median of daily averages.
9. **Page 19 Section VI.C.5.a.vii and viii:** Both of these paragraphs require the bio solids currently land applied as a soil amendment by the District to comply with the RWQCB General Order on Bio solids. This order specifically forbids the land application of bio solids at more than 50% solids. The District currently dries bio solids to 80% solids to assure vector and pathogen reduction to a Class A standard. Furthermore, the District's bio solids also meet EPA 40 CFR Part 503 regulations for Exceptional Quality Bio solids. Further, the District also land applies their bio solids at less than 10 dry tons per acre. As a result, the District bio solids operation is categorically exempt from coverage under the General Order. This interpretation has been clarified in writing from the RWQCB. These two paragraphs, as written, create a conflict that would actually ban the District from the land application of its Class A bio solids on District property, which has been its historic practice for almost 10 years. The District requests that the wording on both paragraphs be modified to allow either compliance under the General Order or demonstrate that the bio solids produced by the District are of sufficient quality and land applied at a sufficient application rate so that the District would continue to be exempt from the General Order.
10. **Page 19 Section 6.b:** For consistency, all limitations should be rounded to 2-place accuracy. In other words, design average dry weather flow should be 2.4 MGD.

Summary

In summary, given the more than 1,000:1 average dilution available in Old River, the Nitrate plus Nitrite Option performance based effluent limitation of 31 mg/L is more than adequately protective. Further, the 23 MPN/100mL total coliform standard is protective of public health in the District's situation, and the UV system and filters have been designed to comply with this appropriate standard. They have not been designed to comply with an unnecessary 2.2

MPN/100mL total coliform standard. We are aware of no quantifiable benefit resulting in the additional cost to comply reliably with an unnecessary 2.2 MPN/100mL total coliform standard. Please feel free to contact me if you have any question regarding the contents of this letter, or if you require any additional information.

Sincerely,

Rick Howard /sa

Rick Howard, General Manager
Town of Discovery Bay CSD

c: Gregory Harris, District Engineer
Eric Zeigler, Stantec Consulting Services